20. (Amended) A unitary object attribute acquisition and analysis system [which is capable of] comprising:

a first subsystem for (1) acquiring and analyzing, in real-time, the physical attributes of objects [such as, for example,] selected from the group consisting of (i) the surface reflectivity characteristics of said objects, (ii) geometrical characteristics of said objects, including shape measurement, (iii) the motion (i.e. trajectory) and velocity of said objects, [as well as] and (iv) bar code symbol, textual, and other information-bearing structures disposed [thereon,] on said objects; and

a second subsystem for (2) generating information structures representative [thereof] of said barcode symbol, textual, and other information bearing structures, for use in diverse applications [including, for example,] including object identification, tracking, and/or transportation/routing operations.

22. (Amended) A unitary object attribute acquisition and analysis system[, wherein] comprising:

an image formation and detection [(i.e. camera)] subsystem [is provided] having

(i) a planar laser illumination and imaging (PLIIM) based subsystem,

(ii) an intelligent auto-focus/auto-zoom imaging optics, and

(iii) a high-speed electronic image detection array with height/velocity-driven photo-integration time control so as to ensure the capture of images [having] of packages so that said captured images have constant image resolution (i.e. constant dpi) independent of [package] the height of said package.

37. (Amended) A planar laser illumination and imaging (PLIIM) based system [and method which employs] comprising:

a planar laser illumination array (PLIA); and

an electronic image detection array which [cooperate to] cooperates with said PLIA so as to effectively reduce [the speckle-noise pattern] speckle-pattern noise observed at [the] said electronic image detection array [of the PLIIM system] by reducing or destroying either (i) the spatial and/or temporal coherence of [the] planar laser illumination beams (PLIBs) produced by [the] said PLIAs and directed into a target [within the PLIIM system], or (ii) the spatial and/or temporal coherence of the planar laser illumination beams (PLIBs) that are reflected/scattered off

[the] said target and received by [the] said image formation and detection (IFD) subsystem [within the PLIIM system].

56. (Amended) A unitary [(PLIIM-based)] planar laser illumination and imaging (PLIIM) based package dimensioning and identification system[, wherein the various information signals are generated by the LDIP] comprising:

[subsystem, and provided to] a Laser Doppler Imaging and Profiling (LDIP) subsystem for generating package information signals;

a camera control computer[, and wherein the camera control computer generates] responsive to said package information signals, for generating digital [camera] control signals; and

[which are provided to the] an image formation and detection (IFD) subsystem [(i.e. "camera")] responsive to said digital control signals, so that [the] said system can carry out its diverse functions in an integrated manner, [including] wherein said diverse functions are selected from the queue consisting of

(1) capturing digital images having (i) square pixels (i.e. 1:1 aspect ratio) independent of package height or velocity, (ii) significantly reduced speckle-noise levels, and (iii) constant image resolution measured in dots per inch (dpi) independent of package height or velocity [and without the use of costly telecentric optics employed by prior art systems],

(2) automatic cropping of captured images so that only regions of interest reflecting the package or package label require image processing by the image processing computer, and

(3) automatic image lifting operations.

REQUIREMENTS UNDER 37 C.F.R. §1.121

As required under 37 C.F.R. §1.121, and pursuant to the present Amendment, a clean set of pending Claims 14, 20, 22, 37 and 56 is set forth below.

14. An automated unitary-type package identification and measuring system comprising:

a housing;

a planar laser illumination and imaging (PLIIM) based barcode reading subsystem disposed in said housing, for reading bar codes on packages passing below or near said system so as to identify said packages; and

a package dimensioning subsystem disposed in said housing, for capturing information about said packages prior to being identified by said PLIIM-based barcode reading subsystem.

20. A unitary object attribute acquisition and analysis system comprising:

a first subsystem for (1) acquiring and analyzing, in real-time, the physical attributes of objects selected from the group consisting of (i) the surface reflectivity characteristics of said objects, (ii) geometrical characteristics of said objects, including shape measurement, (iii) the motion (i.e. trajectory) and velocity of said objects, and (iv) bar code symbol, textual, and other information-bearing structures disposed on said objects; and

a second subsystem for (2) generating information structures representative of said barcode symbol, textual, and other information bearing structures, for use in diverse applications including object identification, tracking, and/or transportation/routing operations.

22. A unitary object attribute acquisition and analysis system comprising:

an image formation and detection subsystem having

(i) a planar laser illumination and imaging (PLIIM) based subsystem,

(ii) an intelligent auto-focus/auto-zoom imaging optics, and

(iii) a high-speed electronic image detection array with height/velocity-driven photo-integration time control so as to ensure the capture of images of packages so that said captured images have constant image resolution (i.e. constant dpi) independent of the height of said package.

37. A planar laser illumination and imaging (PLIIM) based system comprising:

a planar laser illumination array (PLIA); and

an electronic image detection array which cooperates with said PLIA so as to effectively reduce speckle-pattern noise observed at said electronic image detection array by reducing or destroying either (i) the spatial and/or temporal coherence of planar laser illumination beams (PLIBs) produced by said PLIAs and directed into a target, or (ii) the spatial and/or temporal coherence of the planar laser illumination beams (PLIBs) that are reflected/scattered off said target and received by said image formation and detection (IFD) subsystem.

56. A unitary planar laser illumination and imaging (PLIIM) based package dimensioning and identification system comprising:

a Laser Doppler Imaging and Profiling (LDIP) subsystem for generating package information signals;

a camera control computer responsive to said package information signals, for generating digital control signals; and

an image formation and detection (IFD) subsystem responsive to said digital control signals, so that said system can carry out its diverse functions in an integrated manner, wherein said diverse functions are selected from the queue consisting of

(1) capturing digital images having (i) square pixels (i.e. 1:1 aspect ratio) independent of package height or velocity, (ii) significantly reduced speckle-noise levels, and (iii) constant image resolution measured in dots per inch (dpi) independent of package height or velocity,

(2) automatic cropping of captured images so that only regions of interest reflecting the package or package label require image processing by the image processing computer, and

(3) automatic image lifting operations.